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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,162	09/23/2003	Elena Pavlovskaja	018563-004620US	2838

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EXAMINER

FRANK, ELLIOT L

ART UNIT

PAPER NUMBER

2125

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/670,162	PAVLOVSKAIA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Elliot L Frank	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1 and 2 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,463,344 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because the combined requirements of the patent claims 1 and 2 have the same functional limitations as the combined limitations of claims 1 and 2 of the instant invention.

### ***Specification***

3. The examiner has reviewed pre-amendments submitted by the applicant in view of the deficiencies cited in the parent of this continuation application. It appears that

the applicant has corrected all of the previously cited issues. No additional problems have been discovered in the specification.

### ***Claim Objections***

4. Claims 16 and 17 are objected to because of the following informalities:
  - a. Claim 16 includes a presumed typographical error "tooh" in line 2. The examiner believes that this word should be corrected to "tooth".
  - b. Claim 17 depends from claim 16 and is objected to for contained the same deficiencies.
  - c. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22,23 and 24-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - d. Claim 22 includes the limitation "the data set" in line 1. It is unclear to which previously cited data set this references pertains, the originally inputted data set or the compressed data set. The claim is deemed indefinite.
  - e. Claim 24 recites the limitation "the parametric data" in line 5. There is insufficient antecedent basis for this limitation in the claim.

- f. Claims 23 and 25-28 depend from the aforementioned claims and are rejected for containing the same deficiencies.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson et al. (US 2002/0018981 A1) in view of Pieper (USPN 6,151,404 A).

The limitations of the aforementioned claims, and the applicable citations in Andersson et al. are as follows:

1. (original) A computer-implemented method for generating a computer model of one or more teeth (page 1, paragraph 0001), comprising:

[receiving as input a digital data set of meshes representing the teeth];

compressing the digital data set; and displaying the compressed digital data set (page 1, paragraph 0006).

The requirements of claims 3-8, including sending a compressed data file over the internet and displaying it on a remote computer, are made obvious by Andersson et al. at page 5, paragraphs 0043-0044.

21. (new) The method of claim 1, further comprising delivering data representing positions of the teeth at selected points along treatment paths to an appliance

fabrication system for use in fabricating at least one orthodontic appliance structured to move the teeth toward a final position for the teeth (Obvious in view of page 1, paragraphs 0001-0008, wherein Andersson et al. describes a system for electronically sending requirements for dental appliances to a remote site so that an appliance may be manufactured).

While Andersson et al. is a dental appliance modeling system used to send requirements for appliances to remote locations to request manufacture, it does not specifically discuss the additional requirements of claims 1,2,9 and 10 wherein the model is a parametric representation.

Pieper, analogous to Andersson et al. in that both systems are used for the modeling of body parts used in treating patients (Pieper, column 4, lines 55-64), reads on the additional requirements of claims 1,2,9 and 10 at column 12, line 66-column 13, line 4, wherein Pieper discusses various methods of parametric modeling usable to create a computerized model of an anatomical part.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the features of Pieper into the Andersson et al. system to have created an improved system for visualizing an anatomical structure wherein patient specific anatomical dimensions can be easily and quickly determined (Pieper, column 3, lines 20-25).

9. Claims 11-15,18-20,22,23 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersson et al. (US 2002/0018981 A1) in view of Pieper (USPN

6,151,404 A) as applied to claims 1,2 and 19 above, and further in view of Sachdeva (6,431,870 B1).

Claims 11-15,18-20 and 23 depend from claim 1. Claim 1 is obvious in view of the previously combined references.

Andersson et al. also reads on the additional requirements of dependant claims 26 and 27 as follows:

26. (new) The method of claim 24, further comprising providing a user interface through which a human user can provide text-based comments after viewing the graphical representation of the teeth (page 5, paragraph 0043).

27. (new) The method of claim 24, wherein rendering the graphical representation comprises downloading data to a remote computer at which a human user wishes to view the graphical representation (page 1, paragraph 0002).

The Andersson et al. and Pieper combination does not read on the additional requirements of claims 11-15,18-20,22,23 and 24-27 wherein various steps specific to the orthodontic process are required.

Sachdeva, analogous to the previously combined reference in that they all deal with medical imaging used in treating a patient (Sachdeva, column 1, lines 7-9), reads on the additional requirements of claims 11-15,18-20,22,23 and 24-27 as follows:

The requirements of claims 11-15 and 18 including scanning a patient's teeth and rendering a 3-D model viewable by the doctor, are made obvious by Sachdeva at column 4, line 6-column 5, line 43.

The requirements of claims 19 and 20, including a human user modifying a model which in turn modifies a corresponding model data set, are made obvious by Sachdeva at column 6, lines 41-52.

The requirements of claims 22 and 23, including modifying the models to display hidden surfaces of the teeth, are made obvious by Sachdeva at column 4, line 6-column 5, line 43.

Claim 24 includes the same functional limitations as claims 1,2 and 19 combined, and therefore is obvious in view of the same citations in the combined references.

25. (new) The method of claim 24 wherein rendering the graphical representation comprises rendering the teeth at a selected one of multiple viewing orthodontic-specific viewing angles (column 4, line 6-column 5, line 43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the elements of Sachdeva into the previously combined references to have created a modeling system that generates a three-dimensional digital model of an orthodontic structure such that a scientific approach to orthodontics is realized (Sachdeva, column 3, lines 11-14)

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each



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claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Allowable Subject Matter***

11. Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. Claim 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:  
  
USPN 6,250,918 B1 – Sachdeva et al. – Orthodontic treatment system  
  
USPN 6,558,162 B1 – Porter et al. – Modeling system
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elliot L Frank whose telephone number is (703) 305-5442. The examiner can normally be reached on M-F 7-4:30, 1st Friday off.  
  
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (703) 308-0538. The fax phone number

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for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ELF  
June 8, 2004

A handwritten signature in cursive script, appearing to read "L. Picard".

LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100